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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re. Appn. Ser. No. 10/014,766 : Art Unit 2813

Filed 12/11/01 : Exr. E.J. Keilin

Inventors: Dimitrakopoulos et al : Atty Dkt. YOR920010283US2

For: ORGANIC N-CHANNEL SEMICONDUCTOR DEVICE OF
N,N" 3,4,9,10 PERYLENE TETRACARBOXYLIC DIIMIDECOMMUNICATION UNDER 37CFR1.116
EXPEDITED PROCEDURE

Mailstop AF

Commissioner For Patents

P.O. Box 1450

Alexandria, Va. 22313-1450

Sir:

The above identified application is under an 8/5/04 Appeal, Brief due 10/5/04. This communication is in response to the assertions in a 5/6/04 Final rejection, and provides supporting facts not addressed in the Final rejection that should place the application in condition for allowance or in the alternative in better form for resolution of the correct facts pertaining to the invention in the appeal.

This invention involves a thin film organic N,N"-di(n-1H, 1H-perfluorooctyl) perylene 3,4,9,10- tetracarboxylic acid diimide semiconductor material located at a different place in each of top and bottom contact complementary thin film transistor structures that imparts the device improvement properties to each type of transistor structure of better mobility and on/off ratio.

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In Appellants' specification and drawings the invention is illustrated and described in connection with Figures 1,2, and 3 where Figures 1 and 2 illustrate each of the two types of transistor contact position devices and the location of the thin film of the material of the invention, labelled element 20, in each device, and where, in Figure 3 the material of the invention N,N"-di(n-1H, 1H-perfluorooctyl) perylene 3,4,9,10- tetracarboxylic acid diimide is illustrated.

The invention structure is claimed through three "ex parte Jepson" type claims 10, 11 and 12.

The process claiming has not been elected in this examination and is not involved.

Claims 10, 11 and 12 read on the specification and drawings as follows.

In Fig.1 In Fig 2

10. In the fabrication of organic thin film field effect semiconductor devices

wherein there is an n-channel having

source and drain contacts separated by said n-channel, 10, 12

an improvement for producing high electron mobility in
said n-channel without treatment of the interface between said contacts 10, 12

and said organic thin film 20, 20

characterized by,

said organic thin film 20, 20

being a compound with a N,N"-di(n-1H, 1H-perfluorooctyl)

perylene 3,4,9,10- tetracarboxylic acid diimide structure. Fig.3 Fig 3

In Fig. 1 In Fig. 2

11. The improvement of claim 10 wherein in said thin film field effect

semiconductor devices there is a substrate 18 18

with a gate electrode 14 14

that is covered by a gate dielectric, 16 16

said source and drain electrodes 10 and 12 10 and 12

are positioned in contact with said gate dielectric	16	16
and aligned with said gate, and,	14	14
said thin film field effect devices being characterized by		
having an organic thin film semiconductor member	20	20
of a compound having an N,N"-di(n-1H, 1H-perfluorooctyl)		
perylene 3,4,9,10- tetracarboxylic acid diimide structure	Fig. 3	Fig. 3
extending over said source and drain electrodes	10 and 12	10 and 12
and in contact with said gate dielectric.	16	16

12. The improvement of claim 10 wherein

in said thin film field effect semiconductor devices	In Fig.1	In Fig 2
there is a substrate	18	18
with a gate electrode	14	14
that is covered by a gate dielectric ,	16	16
said devices being characterized by having an		
organic thin film semiconductor member	20	20
of a compound having an N,N"-di(n-1H, 1H-perfluorooctyl)		
perylene 3,4,9,10- tetracarboxylic acid diimide structure	Fig. 3	Fig. 3
positioned in contact with and extending over said gate dielectric, and,	16	16
source and drain electrodes	10 and 12	10 and 12
positioned in contact with said organic thin film semiconductor member	20	20
and aligned with said gate.	14	14

In the examination an assumption appears to have been made that the claimed invention is something other than as described above.

With respect to the 5/6/04 final rejection Office Action.

A demand stands advanced, as an objection to the drawings, that Figs 1 and 2 be each labelled - Prior Art - on an assumption that, only that which is old, is illustrated. The demand is accompanied by assertions that drawing corrections must immediately be made to avoid abandonment, and that they will not be held in abeyance.

It is appellants' position that the claimed structures of Figs.1 and 2 each require a film of the material depicted in Fig. 3 to describe the invention so that to introduce a prior art label would produce an incorrect impression. This is considered to be a substantive matter.

In this appeal it will be an appellants' issue that that demand is based on an assumption originating from an "out of context" quotation from the specification that is inconsistent with the invention explanation.

The reasoning is as follows.

In the final rejection there is reliance on, "(See specification p 3 lines 3 - 5.)", as support.

Those lines 3 -5, describing Figs 1 and 2 ,are out of the context of the specification. They are part of the narrative DESCRIPTION OF THE INVENTION portion of the specification.

In contrast the intended BRIEF DESCRIPTION OF THE DRAWINGS section on page 2 states:

" Figures 1 and 2 are cross sectional views of N,N' 3,4,9,10 perylene tetracarboxylic diimide semiconductor material organic thin film transistors, wherein in Fig.1 a bottom contact configuration is illustrated and in Fig. 2 a top contact configuration is illustrated.

Figure 3 is a diagrammatic depiction of the chemical structure of a fused-ring tetracarboxylic diimide compound based on a perylene framework used in the thin film of the invention such as the N,N' 3,4,9,10 perylene tetracarboxylic acid diimide that is illustrated.

It is submitted the better description of a drawing element would be in the portion of the

specification whose function is to describe the drawings so that to label Figs. 1 &2 as being prior art is to produce an incorrect description.

With respect to the rejections on art in the 5/6/04 final action.

In the rejection of Claim 10, on the Struijk reference in view of the Katz reference, much more structure is asserted as meeting appellants' claim limitations than appears to be in the teaching of the reference and particularly in the figure and paragraphs listed in the rejection. It is submitted that the Struijk reference speaks so broadly that such meeting of appellants claim limitations is viewed as unlikely. The discussions involving the interpretation of a claim as being a product by process are rendered moot by the ex Parte Jepson claim format which is much more direct. The paragraph on page 3 that is relied on in the APA assertion is the same out of context one discussed above concerning the objection to the drawings.

In the rejection of claims 11 and 12 on Struijk in view of Katz and Dodalapur appellant is unable to find teaching specific to the limitations asserted to be taught.

In view of the above it is respectfully urged that serious consideration be given to the fact that when the art is viewed in the light of the claim language the claims patently distinguish over the art by the combined requirements of contact location, the location of the film and the specific composition of the film and thereby describe a patentable invention and a valuable contribution to the art.

The application is considered to be in condition for allowance.

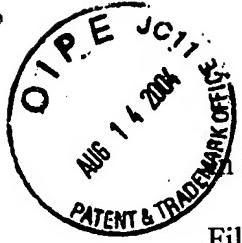
Respectfully submitted,



Alvin J. Riddles

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Alvin J. Riddles 8/13/04